

What is claimed is:

1. A fuel cell comprising:

an electrolyte electrode assembly including an anode, a
5 cathode, and an electrolyte interposed between said anode
and said cathode; and

a resinous passage member and a metal member combined
together such that said metal member covers said resinous
passage member,

10 wherein a coolant flow field electrically insulated
from said electrolyte electrode assembly is defined by said
resinous passage member;

a coolant is supplied to said coolant flow field for
cooling said electrolyte electrode assembly; and

15 electric energy generated in said electrolyte electrode
assembly is serially transmitted through a surface of said
metal member around said resinous passage member, and
collected from said electrolyte electrode assembly.

20 2. A fuel cell according to claim 1, wherein said metal
member is a cladding member formed of a stainless steel
member and a copper member,

at least a surface of said metal member exposed to a
reactant gas, or said surface of said metal member around
25 said coolant flow field is gold plated.

3. A fuel cell according to claim 1, comprising

separators for sandwiching said electrolyte electrode assembly, each of said separators including said resinous passage member and said metal member.

5 4. A fuel cell according to claim 1, wherein said metal member includes a copper member and a foamed metal member attached to said copper member, and said foamed metal member is formed by impregnating a metal fiber with resin.

10 5. A fuel cell according to claim 4, wherein a surface of said foamed metal member exposed to the outside is gold plated.

15 6. A fuel cell stack formed by stacking a plurality of fuel cells each comprising:

 an electrolyte electrode assembly including an anode, a cathode, and an electrolyte interposed between said anode and said cathode; and

20 a resinous passage member and a metal member combined together such that said metal member covers said resinous passage member,

 wherein a coolant flow field electrically insulated from said electrolyte electrode assembly is defined by said resinous passage member;

25 a coolant is supplied to said coolant flow field for cooling said electrolyte electrode assembly;

 electric energy generated in said electrolyte electrode

assembly is serially transmitted through a surface of said metal member around said resinous passage member, and collected from said electrolyte electrode assembly;

5 said metal member is a cladding member formed of a stainless steel member and a copper member;

 said stainless steel member is in contact with said electrolyte electrode assembly; and

10 said surface of said metal member around said coolant flow field is a surface of said copper member, and curved away from said electrolyte electrode assembly outwardly, said fuel cells being electrically connected in series through said surface of said copper member.